

TRAINING

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NEWS IN BRIEF**ABS waives BCSL option**

ABS COMPUTERS has decided against exercising its option to buy the share capital of Business Computers (Systems), BCSL. The option, which expired on December 31, dates back to mid-1978 when the two companies linked up to boost sales. John Bidsen, the ABS managing director, says: "Co-operation between ABS and BCSL will be maintained."

Xerox launch

XEROX is understood to be about to launch a touch-screen office information terminal designed for use by managers. By pressing squares on the screen, each of which can be given a different function by software, even someone with no keyboarding skill would be able to use the unit, reducing reliance on secretarial support.

Network lead

UK UNIVERSITIES have taken a world lead in communications between different types of computer, according to the John Network Team. In a report on its activities from April 1979 (when it started) to last August, the JNT, which advises the Department of Education and Science's Computer Board and the five research councils on data communications, gives a firm recommendation to the Yellow-Book Transport service over its rival ECMA proposal, which it says is less conducive to open systems interconnection.

Scottish venture

A JOINT venture has been set up between the Wolfson Microelectronics Institute and Computer Applications Services in Scotland to concentrate on marketing microtechnology and microelectronics applications to commerce and industry.

RAT Terminal Choice**CENTRONICS 737**

Desk-top miniprinter with text quality printing, proportional spacing, 3-way paper handling.

£425

RAT 10-32, Neal Street, London WC2 Tel 01-486 7022

Copyright claim by ACT Microsoft

AS a major software copyright case brews up in the UK over the copying of the Visicalc program sold by ACT Microsoft, President Carter has signed the controversial US software copyright Bill that enables a user to copy a proprietary program under certain circumstances (CW, July 3, 1980).

ACT Microsoft is seeking an injunction later this month to prevent a private individual, David Bolton, from selling a floppy disk-based product called Visicalc Backup which enables one copy to be made of the business planning package if the host is an Apple II microcomputer.

ACT Microsoft tread carefully at first because Bolton appeared only to be selling Visicalc Backup directly to end users through magazines like Practical Computing.

The Visicalc Backup diskette holds code for cracking the Visicalc protection mechanism.

After Visicalc has been loaded into the memory, the Backup diskette

is re-loaded and Visicalc dumped on to it. A protection mechanism is created making subsequent copies impossible to make, in theory, but ACT Microsoft boss David Rowe claims that one of his programmers has almost broken the code.

The US copyright act enables a user to program provided that it is "an essential step in the utilisation of the machine" and that the new copy is "for archival purposes only." In this way regular archival copies can be taken to guard against computer fraud.

Another significant aspect of the Bill is that copyright applications on software must disclose the first and last 25 pages of source code, a requirement which has raised fears that too much of many programs will have to be made public.

In the UK, progress towards legislation is expected to reach the stage of a Green Paper based on the Whitford Report some time in the spring. It will be published by the Department of Trade.

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market conditions and the high

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The Irish Industrial Development Authority had

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Downtime

by Chad

Getting micro message home - with no strings

THE gentleman in my picture is not fiddling with one of the props from 'The Empire Strikes Back'. This is a design for an electronic stringless guitar that is on show at the Design Centre in Haymarket as part of the new Microelectronics Come Home exhibition.

The instrument, called a Syntar, was designed by Mark Morrison of North Staffordshire Polytechnic, several of whose colleagues have also indulged in this touching practice of building mock-ups of wondrous electronic machines before they have discovered how to make them work, a habit I call writing out the postcard you're going to send back from Bletchley. There was even a cardboard robot vacuum cleaner that would (they hope) have a magical device to stop it from running over the cat.



Considering how uninspired was the Design Council's last microchip exhibition (on office machines) I didn't expect much from this one, intended to show the forthcoming impact of electronics on people in their lives away from work. There were the expected micro-controlled washing machines and central heating controllers in between exhibits of rather excessive whimsy.

In addition to the cardboard musical instrument were bits of flashing jewellery, a door bell that played tunes from a repertoire of several dozen, and a

model train controller that appeared to do nothing at all. There was just one train that went round and round, getting gradually slower as it became tired.

There was also a computer for booties, an elaborate chess-playing machine designed by International Master David Levy, and a car computer from Smith's Industries that told you your instantaneous fuel consumption. With this you can spend all your time staring at the readout and adjusting your speed for greatest economy, so you won't have to be distracted by looking at the road at all.

One of the great ideas men of our age

IT was sad to hear of the death of Marshall McLuhan, one of the most interesting of our age's ideas men. He is best known now for his appearance in Annie Hall, when Woody Allen leads him on to the screen to deflate a pseud in a cinema queue who has been dropping his name.

In the Sixties when he first rose to fame he was chiefly noted for the obscurity of his ideas, the butt of many a cartoon in the New Yorker magazine along the lines of "I'm terribly proud of

my son - he understands Marshall McLuhan".

Long before our present preoccupation with technical change McLuhan was proclaiming that the world would be transformed by electronics. Unlike many pundits today, he actually analysed this thesis, and came up with reasons why differences in media should have so much effect.

It is ironic that someone who devoted his whole life to the theory of communication should have so much difficulty in communicating. Still, it is an irony which McLuhan, with his sense of humour and gift for self-mockery, would have appreciated.

His characterisations of media as "hot" or "cool" (radio is hot while television is cool) were not only generalisations, but difficult to interpret or extend. Whether viewdata is a hot or cold medium I have no idea.

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"Cool man..."

GILB'S MYTHODOLOGY

Motivation by competition

ONE of the fundamental reasons for over-complex designs today is lack of real competition for the designer.

Our designers are not encouraged to stretch their imagination and to increase their professional competence. Why should they? Their design suggestions will be accepted, and will function reasonably well. At least it will take years of both project implementation and operation before critical weaknesses are discovered.

We have a lot to learn from the building-architecture competition model. So why don't we put all our important design projects out to open competition from the many consultants and computer service and hardware suppliers?

If they are as good as they claim to be, designers should have no objection to presenting their best total design solutions at their own cost, and being judged and presented (if they win one of the major prizes) in public.

First prize winners will be awarded contracts for the detailed architecture and the follow-up of the implementation. Second, third and other top places will get cash awards, and we will make use of some of their best ideas.

Policy

Let me try to make this issue even more concrete by suggesting some policy ideas. Compare with your own ideas.

1. All major (over one work year) projects shall be designed with major architecture exploration by means of open competition.

Insecure

2. At least one independent architect shall be considered.

Secure

3. At least three architectural alternatives shall be judged.

Secure

4. The competition shall be announced by public trade Press announcement if necessary, using outside consultants to keep details of cost, time of performance, and so on.

5. The competition principle and the simplification goal can be applied to any one or more of the mathematicalities; for example, we can ask to simplify the uncertain elements of cost, time of performance, and so on.

6. We can ask for a reduction in the number of new and untested components, or of untested components (such as software) used at the top of the hierarchy of design, with the intention that the new components will be used in the lower levels.

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FOCUS

Language of communication

RELIABLE forecasts suggest that communications could be the theme of 1981. Getting it together in datacom terms involves interfacing, Prestel with Ethernet, Euronet with the Cambridge Ring and most probably the DPM with the latest Plessey Glossary of Telecommunications.

The final architectural solutions were total simplifications and attacked the ultimate goal, rather directly.

The new system architecture consciously avoided the large-scale systems in favour of smaller hardware increments. It bypassed database in favour of concentrating on the area of greatest employee impact (data entry).

Independent of any competitors,

9. The first prize-winner shall be offered the opportunity to rework the final architecture according to revised company directives and in the light of other ideas from other competitors.

I don't think many readers have the moral or professional courage to throw their architectures into open competition like this and I can hear the long list of reasons why not, even as I type these words.

Perhaps some of the more timid would consider trying out the idea of at least arranging an in-house competition just to get the feel of it.

10. And increasingly as it looks like being all of us in computing - getting involved in datacom will first have to learn the language.

11. Perhaps some of the more timid would consider trying out the idea of at least arranging an in-house competition just to get the feel of it.

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Arthur Carr (right), president of Codex, discusses the deal with Paul Rosenbaum, vice-president.

Codex buys its UK distributor for £1million

by Donald Kennett

GROWING investment needs at Croydon-based Codex Electronics have persuaded parent company R. H. Cole to sell off the data products division to its major supplier, the US company Codex.

On completion of the £1 million cash deal last week, R. H. Cole chairman Dr Jack Barrett said his company had initiated the sale because the data products division's demands for working capital had threatened to inhibit the development of other parts of the group.

Codex, which claims to be the world's largest independent supplier of data, communication and patching and test equipment from Dynatech, Digilog, International Data Sciences and Bradley Telecommunications in the US.

Data Products Division sales grew an average 37% a year to £3 million between 1977 and 1979, the last year for which figures are available, while profits reached £405,000. Codex grew at over 40% a year in the same period, following several years' growth at 60% a year, but its actual sales and profit figures are not available because they are merged with Motorola's.

Carr said: "We expect to outpace the general growth of our markets as we have in the past."

Rapid growth

One third of Codex sales are outside the US, and European dealers are supported from Brussels. There are no current plans for further takeovers, although since Motorola acquired Codex in 1977, Codex has bought companies in Toronto, Canada, and Huntsville, Alabama, and set up a further company in Phoenix, Arizona.

The acquisitions have brought feedback to Motorola from new markets and have already resulted in custom VLSI devices being produced for modems. Motorola and Codex see themselves as being in the information transport business, which they expect to grow rapidly in the 1980s, and are aiming for leadership in the market on a broad front, rather than concentrating on a specialised segment, which could be done with far smaller investment.

Information transport would

be expected to be the greatest market growth to be private company networks. The one this company was to buy for the Trustee Savings Bank linking over 1,000 branches using Codex network control equipment, switching equipment and modems worth £2 million.

Other banks, insurance companies and commercial organisations generally were likely to enter similar networks in substantial numbers over the next four to five years.

Codex had recently launched a major range of integrated communications processor based on an advanced communications processor to cater for its market, although smaller companies would continue to profit from Codex's bread and butter.

Centre-file into second stage of real time share project

CENTRE-FILE, the specialised bureau subsidiary of Natwest Bank, has implemented the second stage of its massive real time share portfolio valuation project.

The overall project, launched in 1978 and scheduled for completion in 1985, is one of the biggest systems being developed in the City of London.

the system is fully converted.

But informed commentators see a loss of interest by Natwest in this segment of the market which, though highly lucrative, is savagely competitive.

Centre-file, which recently lost the last of its sales force, has indicated that it is happy to retain its existing customer base until

out of a total systems and programming staff of 150 the bureau has committed nearly one-third to the project, which is estimated to need over 600,000 lines of coding to complete.

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the last of its sales force, has

indicated that it is happy to retain

its existing customer base until

the system is fully converted.

But informed commentators

see a loss of interest by Natwest

in this segment of the market

which, though highly lucrative, is

savagely competitive.

Centre-file, which recently lost

the last of its sales force, has

indicated that it is happy to retain

MICRO NEWS

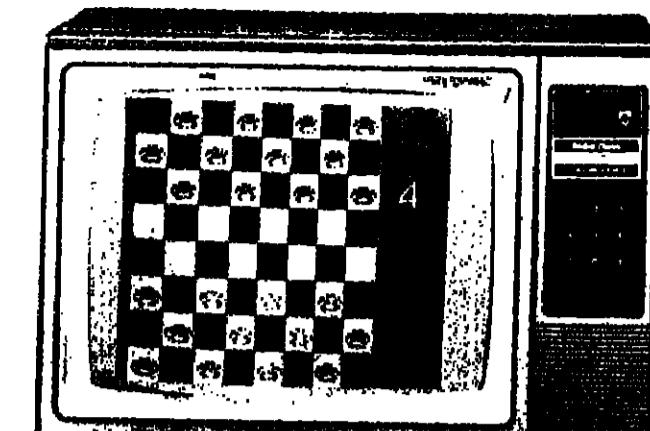
Stay-home banking in Tennessee

HOME banking has become a reality in the US. Customers of the United American Bank in Knoxville, Tennessee, can use a Tandy TRS-80 colour computer for \$15 to \$25 a month to utilise services at their local bank.

The Express Information home banking service is a joint venture of the United American Service Corp, Tandy and CompuServe. About 400 customers have had the facility since October last year but the program will be expanded throughout 1981.

Express Information includes a standard keyboard and simply plugs into the customer's television set and telephone.

Among the facilities available are a news and financial advisory service, payment of bills, access to current information on the customer's account, a book-keeping service and a loan application service.



Tandy's colour computer, which is being used by the United American Bank in Tennessee for a home banking scheme.



Tandy's colour computer, which is being used by the United American Bank in Tennessee for a home banking scheme.

Movement on the 256KdRAM front

IT was a stunning enough announcement in February last year, that NEC-Toshiba and NTT had introduced experimental wafer versions of the 256K dynamic RAM. Struggles were still going on with the development of a working 64K dynamic RAM.

Now Toshiba seems to have won the 256K race with the almost unbelievable news that it expects to be in volume production with the device just two years later, in February 1982.

Warning

It was announced at the 1980 International Solid State Circuit Conference held in San Francisco, and at the same event Fred Bucy, president of Texas Instruments, warned that Japan might take the lead in microelectronics from the US during the 80s (CW, February 29, 1980). Both NEC-Toshiba Information Systems and NTT's

Musashino Electrical Communication Laboratory are wholly Japanese companies.

Even though Japan has won the race, the 256K market, small as it may be at the moment, is not completely Japanese. Apart from the three companies mentioned, one other has just announced its plans and developments in the area: Siemens of Germany. In the US, Motorola hopes to sample a 256K device using HAMOS II in 1982 with production two years later (CW, July 10, 1980).

The question of need and demand for 256K RAMs in the systems industry must be considered. This same industry does not seem to be falling head-over-heels for the 64K RAM, which has become available over the last year from various semiconductor manufacturers.

Preference is still given to the 16K dynamic RAM, of which the standard is the Mostek part, because of cost, availability, standardisation and incentive: The 64K RAM is available in small quantities only for \$60-90 apiece, whereas the 16K costs \$2-3 apiece.

Redundancy

Several industry sources claim that Motorola is the winner of the 64K dRAM race, although Texas Instruments was one of the first companies to announce its development, two years prior to availability. Others in the market include National Semiconductor, Fairchild, Mostek, ITT, Siemens, the Japanese companies, those already mentioned: Hitachi and Fujitsu, and of course, Intel.

Intel's was the latest to be announced and its design involves redundancy which improves on the weak point of 64K RAM production yield. Until now, bad yield has limited the availability of the 64K device, which explains the lack of incentive of systems companies to design with 64Ks rather than 16Ks.

Electronics industry analyst Ben Rosen believes that Intel will set a trend in the industry with its use of redundancy, and feels that its chip may perhaps become a standard (although that is what Immos director Paul Schroeder is hoping will happen with Immos' 64K dynamic RAM which is expected on the market in June).

Siemens, a company that is working closely with Intel in its latest Microsystems 80 project developing a 32-bit chip set microprocessor, has employed protective steps against alpha particle problems have been taken in the design of the Japanese devices. Alpha particles proved a hazard in the production of the 64K dynamic RAM because of the high densities.

One protective feature is that the memory cell capacitance is large enough for the soft errors caused by one particle. Also, critical areas of digit lines are as small as possible and a coating is applied to the surface of the chip.

The NEC-Toshiba chip does not use redundancy because NEC has claimed it to be unnecessary. This could cause the two companies to lose the lead, if they do not get good yields.

32-bit sample this quarter

THE firm 32-bit microprocessor, Intel's JAPK 432, looks like appearing on the commercial market sometime this year. Initial samples are expected this quarter (CW, June 19, 1980).

The 432 will be a three-chip set consisting of an instruction decode unit, 43201; an execution unit, 43202; and an I/O interface unit. Its power is rated by Intel at 2 mW (million of instructions per second), equivalent to the power of an IBM 370 system.

The incorporation of the kernel of an operating system on the device itself means that each chip set can recognise the instructions intended for it and execute them, thus speeding up operation.

Memory management capability includes the mapping of a virtual memory space of 2³² bytes into a physical memory space of 2²⁴ bytes. Intel claims that 32-bit addition and multiplication can be done in 0.4 and 5 microseconds respectively.

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For Conference details write to: The Conference Administrator, IPC Conferences Ltd, Surrey House, 17 Throwley Way, Sutton, Surrey SM1 4QG.

For advance exhibition tickets at £1.00, write to: Microsystems Tickets, IPC Exhibitions Ltd, Surrey House, 17 Throwley Way, Sutton, Surrey SM1 4QG.

Please note applications for tickets cannot be accepted after February 23, although tickets will be available at the door price £1.00. Cheques should be made payable to IPC Business Services Limited.

by Eileen Stainer

COMPANY NEWS

CCF doubles turnover with brokers' package

CONSULTANTS (Computer and Financial), CCF, the City-based bureau and software house, will shortly announce turnover for the year just ended up to £500,000 from just under £240,000 the previous year.

Profits, according to managing director Tim Simon, will be about £100,000 (gross). The exceptional jump in turnover and profit has come primarily from a doubling in the number of systems installed by CCF, although the acquisition of the Payline computer bureau, recently announced, was also partly responsible.

The core of the company's success continues to be the stockbroking package Fiscal.

Exciting

According to Siemens, both NEC-Toshiba and NTT have produced 256K chips which appear to be more like multiple 64K RAMs. Unlike Siemens' device, however, they do offer options for output improvement.

Siemens' chip has another exciting feature. Starting from one special pin on the 18-pin package, it is possible to have a standard 16-pin configuration. One pin is not connected and Siemens says it will be used in the future for one-megabit level integration.

NEC-Toshiba's chip has line dimensions of 1.6-microns achieved by the photolithographic method, but even with this in a 16-pin dual in-line package the chip still measures around five by nine millimetres. It is compatible with existing 16K and 64K RAMs.

NTT's device uses one-micron geometry and electron beam writing. Based on a special molybdenum polysilicon technology it is more advanced than the NEC-Toshiba device, measuring around six square millimetres.

Hazard

NEC-Toshiba's chip has an access time of 160 nanoseconds and a cycle time of 350 nanoseconds, while NTT's has an access and cycle times of 100 and 200 nanoseconds. Siemens' device has a cycle time of 40-80 nanoseconds.

Protective steps against alpha particle problems have been taken in the design of the Japanese devices. Alpha particles proved a hazard in the production of the 64K dynamic RAM because of the high densities.

One protective feature is that the memory cell capacitance is large enough for the soft errors caused by one particle. Also, critical areas of digit lines are as small as possible and a coating is applied to the surface of the chip.

The NEC-Toshiba chip does not use redundancy because NEC has claimed it to be unnecessary. This could cause the two companies to lose the lead, if they do not get good yields.

Translating Visicalc

COMMODORE International has been granted translation rights for the software accounting package Visicalc. The agreement lasts until the end of this year and enables Commodore to supply non-English speaking Western European countries with Personal Software's Visicalc package.

The program can be described as a programmable ledger sheet and will be available in German, French, Spanish, Italian, Dutch and Danish. It is based on Commodore (PET and VIC), Apple, Hewlett-Packard and Texas Instruments microcomputer systems.

Memory management capability includes the mapping of a virtual memory space of 2¹⁶ bytes into a physical memory space of 2¹² bytes. Intel claims that 32-bit addition and multiplication can be done in 0.4 and 5 microseconds respectively.

PRICES of Intel's 2.6MHz version of the 8748 micro-video programmable 8-bit microcomputer have been reduced. Quantities of 100 units are now £1,100.

Fiscal is portable and will run on IBM (System 3 and 34), Ultimac (Honeywell Level 6), Prime and CMC Reality minis. It offers stockbrokers a complete control, accounting and ledger system with facilities for accepting input from the Stock Exchange's Talisman centralised bargain accounting and Charm settlement system.

Fiscal is portable and will run on stockbroker's office. A number of city firms, including Northcote and Bone Fitzgerald, have signed up with CCF on a bureau basis. Northcote is expected to go in-house soon with the complete Fiscal software and hardware package.

Volume and response time limitations are overcome in the Fiscal approach by increasing the number of machines supporting the system, although maximum advantage of the package obviously lies in a customer having less than the quoted peak handling capacity of 1,000 share bargains a day.

The prospects for Fiscal are substantially enhanced by the likely advent of million-byte minis within the next two years. Simon said that a complete system would be installed in a customer's office for about £90,000. Although in its infancy the Fiscal package, which now includes an arbitrage and foreign currency dealing system, is a major challenge to Centre-file and NMW, two large online bureaux which between them account for 85% of the market in which CCF is selling its product.

Scicon acquisition

SCICON, the computer service subsidiary of oil giant BP, has announced the acquisition of the Californian consultancy Systems Control Incorporated.

Systems Control is not a quoted company and Scicon paid £10 million to the shareholders, most of whom are employees of SCI, to acquire control.

The acquisition will increase Scicon's turnover by about \$25 million in the US.

Bureau losing its lead

ROLF and Nolan looks set to lose its position as the most profitable UK bureau after a fall in the half-year profit from £76,000 last year to a current £52,000.

Shares fell back from 70p to 60p despite the fact that the Rolfe and Nolan board insisted that profit for the entire year would be at least as high as last time.

Shares were traded at an average 127p, which shows little change from the 485p price before the four-for-one split which preceded the move from the 163 (2) market.

The company bought Buntal recently. It is confident that the acquisition will add about 25% to company turnover.

Full listed

APPLIED Computer Techniques became a full listed company on the London Stock Exchange last week.

Shares fell back from 70p to 60p despite the fact that the Rolfe and Nolan board insisted that profit for the entire year would be at least as high as last time.

Shares were traded at an average 127p, which shows little change from the 485p price before the four-for-one split which preceded the move from the 163 (2) market.

The company bought Buntal recently. It is confident that the acquisition will add about 25% to company turnover.

Advantage

Fiscal is not a database system in the conventional sense, relying instead on direct accessing of files

Centre-file stages bureau coup

NATWEST Bank's bureau subsidiary, Centre-file, has scored a victory over rival independent stockbroking bureau NMW by capturing NMW founder brokers Charlton Seal Dimmick, as a customer.

One of the biggest stockbrokers in NMW's Manchester home territory, Charlton Seal Dimmick, was a financial contributor to and a founding member of NMW in 1971.

Centre-file, which has no sales force, implemented Charlton Seal Dimmick, allegedly unannounced by NMW's managing director Brian Johnson, in the first brook in the virtual monopoly NMW established among provincial stockbroking firms.

The Stock Exchange refused to buy NMW's equipment, which was all that was left of the bureau's business after the merger.

The loss of Charlton Seal Dimmick, allegedly unannounced by NMW's managing director Brian Johnson, is the first brook in the virtual monopoly NMW established among provincial stockbroking firms.

NMW's reply to Centre-file's comeback was to observe that there will always be a degree of customer volatility in any market place.

It should be seen as an aberration, said NMW, and one which meant little compared to NMW's penetration of Centre-file's home patch in London.

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CW SHARES TABLE

Date: 8/1/81		London Stock Exchange		Paris		US Stock	
Price	Stock	Price	Cross	Price	Stock	Price	Cross

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PEOPLE and EVENTS

Prime appoints its first European VPs



Jerritts on the board

Stephen Jerritts has been elected the Honeywell board of directors. He is president and chief operating officer of the company's information systems business in Minneapolis.

John Oke has joined Harris as senior sales executive for the company's information systems international division in Slough. He previously worked for Honeywell in Zeus-Hermes.

Barry Payne has been appointed sales manager for Geesee Microsystems. He was previously district sales manager at Control Data, and in 1979 was that company's manager of the year.

Sara Morrison and Paul Ashwell have been appointed directors of GEC. William Keen-Mogg will become a director in March.

Donald Lane and John Spalver of Informatics Inc. have been given responsibilities within the company. Lane has been promoted from vice-president to president and general manager of the applications products division, replacing Spalver who becomes division vice-president in the company's Los Angeles headquarters.

Andy Graham has been appointed Southern area manager at Unisys Computer Company. He joins the ADP Network Services.

John Roach has been elected president and chief operating officer of Tandy Corp in Tokyo. He joined the company in 1967.

Richard Hall has been appointed general manager of Centronics Data Computer (UK). He has been with the company nearly five years.

Lois Rice has joined Control Data as senior vice-president of government affairs. She is currently vice-president of the College Board in Washington DC and is a director of Control Data. She will remain on the board.

Keith Nichols has been appointed product marketing manager for CAD/CAM systems at Ferranti Cetec Graph-

PRIME Computer has for the first time appointed officers of the company to run major parts of its European operations. This reflects the company's recent success in Europe. Prime Europe now accounts for 40% of the company's annual turnover.

Peter Glynnes, formerly director of Prime's European marketing operations and David Cheeseman, previously director of research, development and engineering are now vice-presidents.

Glynnes joined Prime three years ago. He previously worked for IBM, IBM

100 field engineers.

Technology consultant

A principal consultant for the Technology Management Centre has been appointed by Logica. Derek Barber took over the post at the beginning of the year, bringing with him several years' experience in communications and computing.

Barber joined NPL in 1954, to work on the early digital and analogue computers. He became involved in the interface between a computer and its environment and devised a standard interface which was a key tool used in the application of computers to process control.

In 1965 he became head of a group developing a research network based on packet switching. With Donald Davies he wrote Communications Networks for Computers. He was made head of information systems at NPL in 1969. At the end of 1970 he became chairman of the REC committee that planned Cost Project 11, and in 1973 became director of the project.

Barber's experiences and involvement with the International Network Group (INWG), led to the publication of his second book, Computer Networks and their Protocols.

With Logica, Barber will be concerned with the management and organisational implications of the new technology.

Research post at Urwick Nexus

Diana Duggan has been appointed to manage major research projects to be undertaken by the systems research division at Urwick Nexus. She joins the company from Logica, where she undertaken technical direction of the Computing Services Association's consultancy study on the implications of text processing.

Christopher Walker is now head of data processing with Tyne and Wear County Council. His working life has been spent with local government, with the computer sections of the treasurers' departments of North Riding County Council and the Newcastle City Council, and since 1973 as chief executive of BOC Computer Services, with Tyne and Wear.

Rufus Greenbaum has been appointed sales manager for the UK and Scandinavia at General Instrument. He

joins from Intel, where he held overseas sales appointments for the last three years. Before that he was with Motorola and SGS and has about 18 years' experience in the European semiconductor industry.

He was formerly with Vickers Shipbuilding Group.

Bill Williams, previously Southern region sales manager with Harris Systems, has been appointed to the board as director responsible for marketing at Synapse Computer Services.

John Roach has been elected president and chief operating officer of Tandy Corp in Tokyo. He joined the company in 1967.

Richard Hall has been appointed general manager of Centronics Data Computer (UK). He has been with the company nearly five years.

Brian Mills, until recently chief executive of BOC Computer Services, has been appointed a non-executive director of Abex Computer Systems.

Keith Nichols has been appointed product marketing manager for CAD/CAM systems at Ferranti Cetec Graph-

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PL/I HOLLAND	CORAL SURREY	CONSULTANTS
Programmers & Analyst/Programmers with 3+ years PL/I, ideally with some TP and DB knowledge required by Administrative headquarters of leading oil company in the Netherlands. £12-£16K	Programmers and Analyst/Programmers with CORAL and Fortran or Assembler on minis sought by Surrey-based Software House, previous involvement with radar systems an advantage. to £8.5K	Senior Consultants and Managers with wide applications knowledge and experience in client liaison, proposal writing, interpretation of tender documents, etc., required for London office of International Systems Group. to £14K
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Consultants, Designers, Analysts and Programmers needed to join Hans-based teams working for leading UK Systems and Software House on military and communication projects. At least 5 years' experience in real-time systems, CORAL or PDP 11, DG Nova, Ferranti or GEC desirable. £8-12K	Programmers (min. 2 yrs.), Analysts, Designers and Team Leaders with COBOL experience required for major new projects being undertaken by Northern Branch of leading British Software House. Applications include order processing and pension management funds. Relocation offered where appropriate. £8.5-10K	



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COMPUTER AUDITOR

£8481-£9411

The Council currently operates an ICL 2956 computer which will be replaced in September 1981 by an ICL 2966. A computer auditor is required following the advancement of the career of the present postholder. Applicants are required to have practical technical experience of computers including a knowledge of programming and systems analysis, must be able to communicate effectively with management at all levels and, ideally, would have an appreciation of accounting or audit disciplines.

The postholder is responsible to the Chief Internal Auditor and is expected to make a major contribution towards the efficiency and effectiveness of the Council's financial control systems including the physical and operational security of the computer installation; the appraisal and development of new applications and enhancements to existing applications; the confidentiality of data and the provision of an information service to assist the audit function in general.

The post is suitable for a computer specialist, ideally, applicants should have financial experience.

Applications, stating age, experience, education, present employment and the names of two referees, to:

County Treasurer (Ref. JS/RP), County Hall, Taunton

Prospective applicants wishing to discuss the post should ring Tony Parr on Taunton 73451, Ext. 586.

Closing date: January 23, 1981.

(Ref. JS)

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(Ref. JS)

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For application form ring Gordon Newton on 01-329 6774 or write to: Landline/Middle East Ltd, 20 Landline House, 20 Great Smith Street, Westminster, London SW1P 3BU.

DHSS HYPERTENSION CARE COMPUTING PROJECT

This project, which is based at Northwick Park Hospital, processes clinical data about patients being treated for raised blood pressure in a number of hospital clinics and present in batch on an ICL 1900 in a new 5-year grant, and move it to the now local DEC 2080, end to acquire remote intelligent RJE terminals. The project grant supports four posts for computing professionals and three of these are at present vacant. Applicants should have a formal training in computing to graduate level (or the equivalent length and breadth of experience). The length and type of post-graduate experience required varies with the different posts.

Principal Analyst/Programmer

£8,544 to £10,275 (NHS Scale 14)

This post is for someone with considerable technical knowledge and experience and the ability to lead the small team. The appointee will help to choose the new equipment and to design and implement the new system. At least five years' post-graduate experience including 18 months' programming in more than one language and supervising staff is required. This appointment terminates with the current grant on May 31, 1986.

Senior Analyst/Programmer

£7,661 to £9,288 (NHS Scale 9)

This post is for someone to retrieve and analyse data from the file and help with the new system. At least two years' post-graduate experience of systems analysis and programming, preferably within a team, is required. This appointment is for two years.

Analyst/Programmer

£6,839 to £8,221 (NHS Scale 4)

This post is for someone to design and implement programs and will afford the opportunity for some experience of systems analysis and design. It is suitable for someone who has received appropriate training and wishes to develop their career by obtaining practical experience. This appointment is for two years.

Further particulars and application forms may be obtained from the District Personnel Department, Hammersmith Hospital, Du Cane Road, London, W12. Telephone: 01-783 2030, extension 49. The closing date is February 2, 1981.

SENIOR SOFTWARE ENGINEER

A new post has been created for a Senior Software Engineer to help provide a high quality time-sharing computing service to medical research workers at the Clinical Research Centre. The existing ICL 1903A will shortly be replaced by a DEC 20/60.

The successful applicant will be responsible for acquiring a detailed knowledge of the TOPS 20 operating system and utilities of the new computer, for enhancing it and its user documentation.

In conjunction with other staff, he/she will develop and implement a policy of software acquisition and maintenance. He/she will also be responsible, in both professional and managerial capacities, for the work of the division's Junior Software Engineer and 3 Analyst/Programmers.

Applicants should have a good honours degree in computing science or an equivalent qualification, and at least six years of appropriate experience. The salary will be superannuable, and not less than £8,500.

Application forms and further details may be obtained from Mr. A. Mariner, Staffing Officer, M.R.C. Clinical Research Centre (Northwick Park Hospital), Watford Road, Harrow, Middlesex HA1 3UJ, quoting ref. 108/34100. Closing date 20.1.81.

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The planned development of new communication systems including Data/Voice Networks, Electronic Mail and Message Switching has created the challenging post of Communications Consultant within our client's Advanced Projects Department.

Candidates will be required to demonstrate good experience of micro computing and telecommunications to enable them to review current technology, design and project manage these new developments to successful completion.

This is a senior appointment and the successful candidate will communicate with all levels of User Management up to Board level in addition to liaising closely with outside organisations including manufacturers.

Our Client is a highly successful commercial organisation and the starting salary is further supported by an attractive package of benefits.

Ref. NW1/1501

The Company offers a secure and progressive future with salary potential directly related to one's personal achievements. If you feel you are the person for whom we are looking, please telephone to arrange a confidential meeting to discuss the matter in detail.

Ref. AW/1501

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JBA**Manufacturing Systems Spec.**

Surrey £13,000
 Only very occasionally does an opportunity arise to join a world-wide organisation and take control of the U.K. operation. To qualify for consideration it is essential to have extensive knowledge of IBM System 34, RPG II and MAPICS. As this is an unusually demanding role it calls for a combination of organisational and technical skills, also the ability to make decisions and deal with people at all levels. Ambitious, self-motivated and professional people will find significant prospects, good financial rewards and travel opportunities with this international corporation. Contact: Janet Chivers

Sales Executive

London c. £18,000 + Car
 We have been retained by a highly successful systems company to recruit for them an experienced Sales Executive. Candidates will be required to sell a range of equipment which is based on software driven terminal systems which, at entry level, are plug compatible. These emulate IBM, ICL, Honeywell and Univac, but have the capacity to support a wide variety of software and hardware in the distributed processing marketplace. It is essential that applicants have at least three years experience and can provide a proven sales record to date. Contact: David Hendry

Banking Consultants

London Based Up to £16,000 + Car
 A leading consultancy organisation, with a well established record in the finance and banking sector, wish to appoint a number of specialist consultants to advise and assist clients on the design and development of new systems. Applicants should have at least five years in dip with a substantial amount of time spent in a banking/finance environment. For the more senior positions our client expects a minimum of eight years experience. Specific background in developing foreign exchange and loans and deposits systems on IBM or DEC hardware in particular, would be advantageous. Excellent working environment with the highest professional standards. Contact: Jim Baker

Senior Systems Designers

London Based Up to £15,000
 Experienced Systems Designers are required immediately by our client, a leading computer consultancy, to take a key role in the design of a large real-time communications system. Applicants should have at least six years in the design of mainframe (preferably ICL) applications and be capable of selecting hardware/software/packages for inclusion in a system. Direct involvement with database (DBMS), graphics or communications would be an asset. Excellent salaries according to experience. Possible assignments in B'ham. Contact: Jim Baker

Systems Analysts – Insurance Systems

Rural Hampshire to £20,500 + Mortg. Sub. + Bens.
 A large and expanding insurance company are seeking additional Systems Analysts to strengthen project teams involved in exciting design and development work. Current configuration includes Rediffon main and Burroughs 86800 mainframe, incorporating batch systems and on-line testing facilities. A business systems involvement, including 2 years systems analysis and experience of COBOL, are the main qualities sought. An excellent benefits package includes mortgage subsidy, generous relocation expenses, low interest loans, plus others. Contact: Brian Postles

Programmers

Wembley Park Up to £9,000
 A distributed multi-national company based in Wembley Park are currently developing an HP 3000 system and so require a number of Programmers to support their teams. Candidates should have at least 2 years experience of COBOL, programming preferably gained in an HP 3000 environment. Previous experience of Real-Time would be advantageous. Comprehensive training will be given in a number of areas. Usual large company benefits apply. Contact: David Hendry

Sales Support

London Based Neg. to £8,000 + Car
 (Mini Systems)
 A real chance to join an organisation which has grown in influence and whose achievements reflect the acceptance of its products in expanding multinational markets. If your primary responsibility is to develop and implement mini-based commercial business systems and you feel that the next challenge is to move into sales support then our client, a mini computer manufacturer, is able to offer opportunities in this area. Analysts and Programmers with sound BASIC experience, will be considered for business support positions. A background of commercial applications is essential. Contact: Margaret Davies

Communications Programmers

London £8,000
 We have been retained by an international consultancy organisation, who are expanding their development in Video/IVR systems, to recruit two software programmers to be involved with this exciting application. Applicants should have at least two years' programming experience, preferably with FORTRAN or PDP 11's or VAX 11's in a communications environment. Knowledge of X25, 3270, packet, message switching would be an advantage. Ability to work with users with minimal supervision is essential. The job involves colour business graphics and networking. Contact: Jim Baker

JAMES BAKER ASSOCIATES
 International Personnel Consultants,
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 Tel: 01-436 2511

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 and Operators~
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IBM 4341

We have recently installed a new IBM 4341, running under OS/VS1 and VM/CMS, to replace a bureau service from our parent company.

It is therefore an opportunity to bring your IBM experience right up to date on the development and implementation of new systems projects offering exceptional challenge and interest.

We now need the following experienced men and women to join our newly formed Information Systems Department:-

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Candidates should have at least one year's PL1 experience or, alternatively, be able to offer Cobol coupled with an IBM background.

OPERATOR

Should have at least one year's experience on either VM/CMS or OS/VS1. A rotating 2-shift system will be in operation for the above two posts for which a premium is payable.

As a Member of the Allied Breweries Group of Companies, we can offer genuine career prospects, competitive salaries, and a range of valuable fringe benefits which include BUPA and a contributory pension scheme.

Please telephone or write for an application form and more information to Mrs. B. Cooper, Personnel Services Officer, Britvic Limited, Britvic House, Broomfield Road, Chelmsford, Essex CM1 1TU. Telephone Chelmsford (0245) 61871 (ext. 123).

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One of the most important and successful companies in the UK software market have asked us to find two sales executives for Essex, Bedfordshire and Hertfordshire. Experience in software sales and an ability to negotiate with Blue Chip companies are the necessary qualifications for our new and successful career for the '80s. Telephone Ruth Herman on 01-637 9611.

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As a highly successful specialist recruitment consultancy operating throughout the UK, we offer a service to our clients and candidates second to none.

We are currently seeking another consultant to join our team recruiting staff for the systems and programming side of the industry.

You will have a sound general knowledge of the computer market with a sales orientation, a sales support background would be ideal. The pace is fast but the rewards great with a remuneration package that reflects our status and performance in the industry.

If YOU LIVE IN SCOTLAND PLEASE

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Phone Diane Oubridge on 01-637 9611.

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Minimum £18K + 2 Litre Car
LONDON

When you are a computer manufacturer with an outstanding record in growth, and products which are market leaders, only the best salesmen are good enough. Have you worked in a mainframe environment? Or do you have an excellent mini computer sales record? Ideally, if you can combine this experience with a background in stockbroking, our client will offer you an excellent basic salary, and a highly motivating commission scheme and some of the best career prospects in the industry.

For more details contact Robin de Rouen on 01-637 9611.

SELLING IN THE FINANCIAL MARKET

Banks, Insurance Companies, Pension Funds – these are all parts of the business world that are growing. The leaders in the sale of computerised services to this market have asked us to find sales executives to help them expand even further.

If you are a graduate and have a strong financial or computer sales background this is a chance to join a highly successful company who are part of a major group.

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A DIVISION OF INBUCON MANAGEMENT CONSULTANTS LIMITED

REF: CW/4/81
**SYSTEMS DEVELOPMENT MANAGER U.K.
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You probably graduated about eight to ten years ago, certainly have programmed and acquired considerable business systems experience — covering a range of commercial applications on IBM equipment. You have been responsible for the successful completion of projects within agreed timescales and your Data Processing performance so far has demonstrated that you truly understand users' requirements and problems. In addition you possess the potential to move into a Senior Management role.

TELEPHONE US NOW (24-HOUR ANSWERING SERVICE) OR WRITE TO US IN ORDER TO ARRANGE AN IMMEDIATE INTERVIEW — EITHER IN LONDON OR THE SOUTH — AS OUR CLIENTS WISH TO MAKE THIS APPOINTMENT IN JANUARY.

INBUCON MANAGEMENT CONSULTANTS LIMITED
 D.P. Appointments & Contract Personnel,
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The company, formed 6 years ago, offers full European software support to a major OCR manufacturer, and are successfully marketing 8080 based data entry and commercial micro systems. This exciting opportunity to take responsibilities for implementation and design is backed by a generous compensation package including a car. To continue your interest, please contact Capp Associates quoting reference CW 100-17 for immediate attention.

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Staff Recruitment Department

THE BRITISH COUNCIL
 19 Savile Row, London SW1A 2BN. Tel: 01-580 8486 ext 2681 or 2844.

THORBAR

A DIVISION OF INBUCON MANAGEMENT CONSULTANTS LIMITED

REF: CW/4/81

IMS Systems Programmer

Amsterdam—1 year £19,000+p.a.

Inc. benefits

We are seeking a systems programmer with one or more years IMS experience. The initial assignment is to spend one year working as a member of a 3-man team in the Netherlands. The other team members consist of a senior systems programmer and a trainee, and the specific duties to be performed include penning and maintaining 1.1.6; planning for and implementing 1.2; providing advice and support to application development teams; and assisting in the evaluation of new DB/DC facilities and techniques. Our client's data centre runs MVS/SE and has a heavy IMS transaction load, with links to internal and external networks.

IMS DB Support

Netherlands—9 months+ £19,000+p.a.

Inc. benefits

We are seeking an IMS specialist with a good understanding of IMS database design, and familiarity with IMS utilities plus the technical aspects of DBA work. The initial assignment is to work for at least 9 months in the Netherlands, assisting in the implementation of IMS at a VM/VS1 4341 installation, which has several existing systems running on a non-IBM DBMS. Duties will include database design for existing and planned applications; the generation of DBD's, PSB's, etc; setting up IMS standards and procedures; and the provision of training and technical support to application development groups.

CDS is a 45-strong Anglo-Swiss consultancy specialising in providing Systems Programming, Database and Telecommunications support to European IBM users. The majority of our staff are employed by CDS AG of Zurich, but we are also prepared to enter into agreements with independent consultants.

For further details of these positions, please telephone or write to Jim Shaw at our UK offices, or call during evenings/weekends on 0890 24646.



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ARAMCO is one of the world's largest oil companies and is currently seeking for a Computer Operations Supervisor and two Senior Computer Operators to work in the ICL building at Putney, where our client is based, on our batch processing and on-line applications which run under DME and GEORGE 2.

The Computer Operations Supervisor will have responsibility for controlling day-to-day operations and supervising Control staff in the computer room and media library. Duties will include scheduling work, liaison with Control departments in central London and with ICL, responsibility for ordering supplies of computer hardware, tape and discs, liaison with maintenance, maintenance, control systems, and with hardware and stick media control. Applications should have a good general education and two years experience in computer work, including GEORGE 2, a reasonable level of proficiency in technical, mathematical and the supervision of staff.

Experience of the ICL 2950 operating under DME, batch processing or systems software would be an advantage. Starting salary is £7966 rising to £9571, 22 days annual leave plus 2½ privilege days. Non-contributory pension scheme.

The Senior Computer Operators (2 posts) will act as shift leaders, each shift consisting of one senior and one junior operator. The senior operator will be responsible for running the work of the shift and will share operating duties with the junior operator including controlling the 2950 through its VDU console, loading computer peripherals and general maintenance of the computer hardware and software. Applicants should have a good general education and previous experience as a computer operator. They should be capable of working under minimum supervision and should be good at dealing with all levels of staff.

Experience of ICL software and hardware, knowledge of GEORGE 2, or communications facilities would be an advantage. Applications should be physically fit.

Computer operators normally work a Monday to Friday 5-shift system (0800-1600 and 1200-2000 hours) alternating shifts weekly. Starting salary is £8910 at age 20 or over, rising to £7761. Performance payments are payable following one year's satisfactory performance in the first 20 days annual, plus 2½ privilege days. Non-contributory pension scheme.

Find out more about working with ARAMCO by telephoning John Werner on 0423 88861, TODAY.

or write to Dept PJ/0115. Interviews will be held in the very near future.

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SAUDI ARABIA Analyst/Programmers to £19,000 + car + accom.

This established software consultancy is continuing to expand rapidly and has an urgent requirement for experienced Analyst/Programmers. Working in the areas of on-line commercial applications, including inventory control and accounting, you must be dedicated and energetic and be capable of taking projects through from feasibility to on-site implementation. Essential qualities are knowledge of IBM SYS 34, 3-4 years COBOL plus substantial analysis exposure.

Bachelor status is preferred but equal consideration will be given to married applicants without children. Fixe salary, plus furnished accommodation, and a company car are included in an excellent package. Initial interviews will be held in London.

Contact: Brian Postles

Designers & Programmers — Security Software

London/Bucks based **Up to £13,000**

One of the leading software houses has immediate opportunities for Designers and Senior Programmers to join a team developing a sophisticated real-time system where the security aspects are of prime importance. Candidates must have been involved in the design, development and programming of security software for large mainframe and real-time applications. Experience in designing controls for access to systems, passwords and other types of checking is essential.

Contact: Jim Baker

Product Support

c. £10,500 + car

Thames Valley Our clients are the originators and distributors of a world renowned range of Database and T.P. software products. They are currently looking for good all-round DP technicians to work in their Product Support Group.

Applicants should be well versed in business techniques, and must have a thorough understanding of commercial data processing. An IBM programming and analysis background is essential. The ability to communicate with customers will be an important requirement of the successful candidates together with obvious technical ability. A unique opportunity for small team involvement within a technically advanced environment.

Contact: Margaret Stevens

Programmers

Up to £9,000

Our client, an expanding systems consultancy are looking for a number of programmers to design and develop specialised software for turnkey and on-line projects. Applicants should have a minimum of one years RPG, COBOL or CORAL, or any other standard high level language.

Contact: David Hendry

Senior Systems Analyst

up to £9,000

N.W. Kent Our client, a successful specialist engineering and manufacturing organisation, has an opportunity for a Systems Analyst who is looking for a career step with considerable future potential. Candidates should be graduates, or professionally qualified, with an extensive systems background in developing commercial applications, preferably in a manufacturing environment using ICL equipment.

This is a key appointment in D.P. development and applicants must have the personality, presence, leadership, intellect and capacity to deal with all levels of management and staff. Large Company benefits.

Contact: Jim Baker

Analyst/Programmers (BASIC + 2)

Up to £9,000

City Our Client, an interesting and unusual financial organisation, is looking for experienced Programmers to join them at a time when they are installing two PDP 11/70s. A minimum of two years experience of BASIC+ or BASIC+2 language from a financial or commercial environment, together with a knowledge of common files and DEC hardware would be a definite advantage. The ability to understand users and their problems is essential. Good salaries and generous benefits are offered to successful candidates.

Contact: Janet Chilvers

Communications Programmers — Babbage

£8,000—£9,000

Continuing expansion of our client's international Videotex business has created opportunities for GEC 1000 Babbage programmers in real-time and network systems. Applicants should have at least four years programming experience and be capable of tackling packet switching, colour and business graphics. In this fast moving and exciting field, possible overseas travel.

Contact: Jim Baker

Mini Support Analyst Programmers

£7,000—£8,500

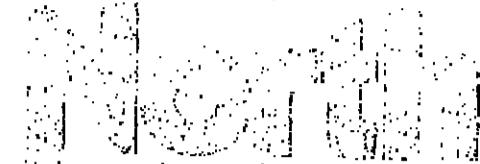
London Due to steady expansion, our Client, an internationally known mini manufacturer, specialising in the marketing of banking, word processing and library/circulation systems, wishes to recruit two programming professionals to join their development/support team. A minimum of two years on-line programming experience, preferably gained in a mini-environment, would be ideal, but consideration will be given to high calibre candidates with a sound on-line programming background. Training facilities and career prospects are excellent as this organisation firmly support promotion from within.

Contact: Isobel Bruce

JAMES BAKER ASSOCIATES, International Personnel Consultants, 32 Savile Row, London W1. Tel: 01-439 9311

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Computer People, Wherever you are.



Below are listed a few of the contract assignments and permanent appointments which we are seeking to fill. To discuss these opportunities or to register with us, telephone Computer People North on 01-463 4501, or mail the coupon below.

Permanent Appointments

Systems Analysts North West £9000 required for major organisation who are expanding. At least three years commercial systems experience on any mainframe. Excellent package + bonus. Ref: DE/245.

Programmers Manchester area To £9000 needed for a nationwide software house. Experience of BASIC on PDP 11's in a commercial environment essential. Interested? Contact giving Ref: DW/198.

IBM COBOL Programmers South Manchester £6800 needed now to join a major service organisation. TP experience an advantage, excellent package including relocation. Ref: DE/352.

Programmers and Analysts N. Manchester £7500+ If you have Burroughs experience you are required for an expanding installation. Financial and manufacturing background preferred. Ref: DW/149.

Contract Assignments

ICL 2900 Systems Analyst
ICL VMEB COBOL Programmers
HP 3000 Image Analyst
370 DOS/VSE Systems Programmer
COBOL MKIV Analyst/Programmer
Business Analysts
370 OS System Programmer
370 COBOL CICS/DLI Programmers
370 CICS SYSTEMS Designers
S34/38 Analyst/Programmers
Burroughs DMS2 GEMCOS Programmers
370 COBOL/Fortran Analyst Programmer
S34 RPGII Programmer
2904 COBOL/RPGII Programmer
370 COBOL Filetab Programmer



There are numerous contract and permanent vacancies in the Midlands region, and a few are shown below. Get more information by ringing Computer People Midlands on 021-463 4501, or by mailing the coupon.

Permanent Appointments

Project Manager East Midlands c£9000 pa+car IBM background required, SYSTEM 3 preferred with RPGII/COBOL Programming experience. Must have at least 6 years D.P. background together with management skills. Ref: RB/J328

Senior Programmers Analyst Programmers Birmingham Area To £9.5K for massive new development. Experience with any of the following: IBM IMS, PLI, COBOL, APL or CICS is necessary. Ref: DD/J323.

Systems Analysts Birmingham Area To £9000 pa Challenging IBM environment undergoing major reorganisation and development. COBOL programming experience desirable. Excellent opportunities available within a well-integrated project team. Ref: PH/J324.

Programmers/Analyst Programmers Birmingham area to £8000 pa Real-time or on-line mini experience—preferably DEC or IBM together with BASIC/BASIC+. Minimum 2 years D.P. experience. Excellent opportunities. Ref: PH/J327

Contract Assignments

IBM 8100 Analyst Programmer
SHADOW TOTAL COBOL Programmers
PL/I IMS Programmers
OS COBOL Analyst Programmer
ICL ME 29 COBOL Analyst Programmer
U90/30 OS3 COBOL IMS90 Programmers
U418 Assembler Programmer
H64 TBS/IDS COBOL Programmer
PDP 11 BASIC+2 RMS Programmer
HP3000 IMAGE COBOL Programmers
BT1 4000/5000 Consultant
O&M Consultant—Manufacturing
APL Programmer
DEC RSX 1 M MACRO11 Programmers
FORTRAN Programmers



There are numerous contract and permanent vacancies in the Greater London area and the Home Counties region of the UK, as serviced by Computer People London, and the opportunities available are a small selection. For details of opportunities in the Home Counties, call 01-836 8411, or mail the coupon.

Permanent Appointments

Senior Project Leader East London/Essex c£11000 Sound analysis experience from a commercial background is required, preferably on IBM hardware. Good COBOL knowledge is an advantage. Ref: F/11805

Analyst Programmers and Programmers St. Albans Herts £8000—£10,000 A minimum of 18 months experience of RPG, BASIC or COBOL to work in an expanding software house. Good promotional prospects. Ref: SN/10545.

Analysts Saudi Arabia to £21000 A leading oil company needs experienced analysts with at least 3 years PL/I to work at their developed complex on the Arabia Gulf. Ref: PM/58C

Command and Control N.W. Home Counties £9000—£15,000 Systems Software Specialists with some knowledge of communications, military applications, message switching, database, graphics or security systems are required at all technical levels for a major project. Senior positions could also command a company car. Ref: CB/11816.

Contract Assignments

IBM SERIES 1 Programmer
PL/I Programmer with RPGII on System 34
OS PL/I IMS DB/DC Programmer
ICL System 10 ASSEMBLER
IBM DOS Systems Programmers
IBM SVS/MVS Systems Programmers
IBM DOS/VS PL/I Structured Programmers
PDP BL/IS Programmers
ICL 1900 G3 Analyst
IMS DB/DC COBOL Applications Designers/Programmers
IBM SYSTEM 34 RPG2 Programmers
IBM 8100/3790 Programmers
IBM DOS/VSE DLI CICS COBOL Programmers
PDP ARBAT AIMS Programmers
NCR V8585M/V8565 LEVEL 2 COBOL Programmers



There are numerous contract and permanent vacancies in the South of England, and the opportunities available are a small selection. For details of opportunities in the South, call 01-836 8411, or mail the coupon.

Permanent Appointments

Systems Analyst Woking Surrey £68500 You should have in excess of 3 years commercial experience. The company utilise an ICL 2960, therefore experience gained on ICL mainframe would be advantageous as would knowledge of insurance applications. Ref: MB/1.

Programmers Surrey Salary negotiable Urgently required experienced IBM Programmers to work on Banking applications. Knowledge of IMS DB/DC or CICS DLI would be advantageous. The Company offer a very high remuneration package coupled with the usual benefits associated with a Banking organisation. Ref: MB/2.

Analyst Programmer Ashford Kent £68000 A world-famous Company are looking for a Programmer with at least 2 years PDP FORTRAN and a good knowledge of RSX11M to aid the implementation of and maintain a graphics package, liaising with both UK and abroad. Full relocation. Ref: SAB/1.

Systems Analyst Kent Package £10K (inc. mortgage subsidy) Minimum of 3 years experience in design and implementation, preferably with an insurance/financial background. The installation offers both mainframe for processing and mini computers for datacapture. Flexitime, relocation contributions etc. Ref: SAB/2.

Contract Assignments

Burroughs 1800 MCP COBOL Programmer
Burroughs 6700 MCP COBOL Programmer
IBM 370 IMS Database Programmer
IBM 370 OS COBOL Programmer
IBM 370 OS COBOL/IMS Programmer
IBM MARKIV Programmer
IBM 370 OS COBOL Programmer
IBM 370 CICS/DLI Analyst Programmer
ICL 2900 COBOL Programmer
ICL 1900 COBOL Analyst/Programmer and Programmer
PDP 1134 RSX11 FORTRAN Programmer
PDP 1134 RST/E BASIC+2 Programmer
UNIVAC 9030 SYSTEMS Programmer
UNIVAC 9030 COBOL Programmer
HONEYWELL 66 COBOL TDS IDS Analyst/Programmer

Contract assignments

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Contract assignments

CoOperators

While the economy is sagging around us, we at CoOperators have expanded our services. Since 1974 we've been leaders in the contract operations field, and now we are proud to announce our new permanent recruitment division, headed by Kay Stebbings.

A few permanent career opportunities are shown below, and there are many more throughout the U.K.

A new service for 1981

If you're thinking of changing your job you should be talking to Kay-Mary or Madeleine at CoOperators. Ring 01-836 8411 or mail the freepost coupon. TODAY.

If it's contract work that you're interested in, we have a constant supply of contract assignments - at home and abroad - so make sure you're registered with us by ringing Liz or mailing the coupon.

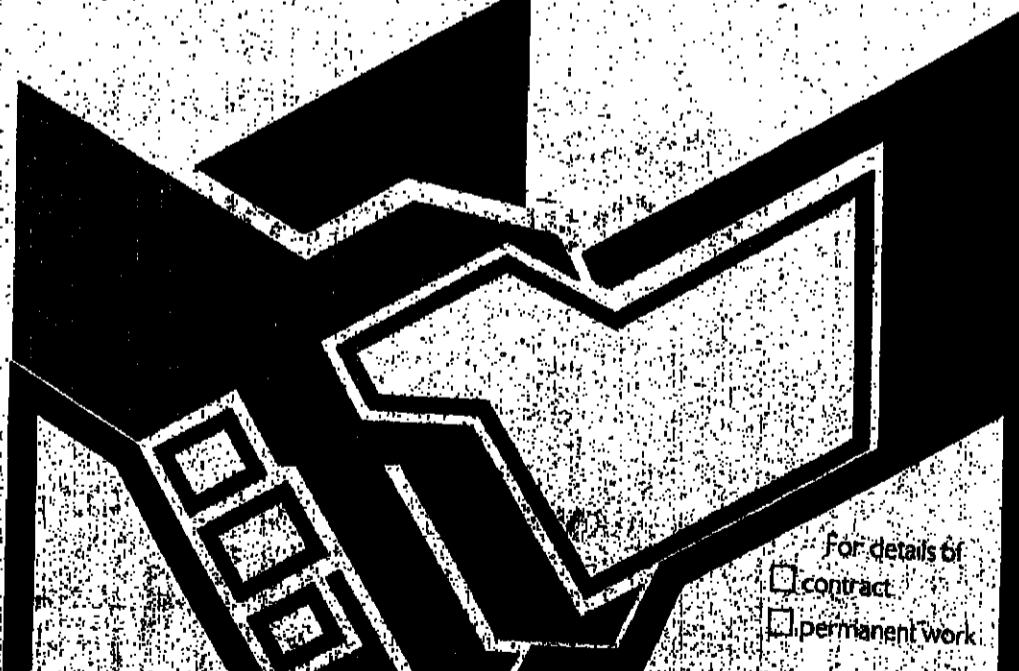
Permanent Appointments

IBM Senior Operator £6-6.5K Mid-Surrey
Wide scope for promotion can be offered at this dynamic and expanding IBM 3031 installation. Our client's current requirement is for a competent console operator who has a sound working knowledge of OS/VS2 with MVS and ES/2, coupled with the ability to act as a senior member on shift. Company benefits are excellent including relocation assistance. For further details please phone Kay. Ref: IP13/CW

IBM Operator £6.2K City A large, international, centrally-located company is offering a good salary and excellent company benefits for a good DOS/VSE or DOS/VSE operator with 18 months experience. A knowledge of CICS and BTAM would be an advantage. For more information regarding this position, where good opportunities exist for training and promotion, please contact Mary. Ref: MC24/CW

Operations Manager £10.5K package Kent coast A professional Operations manager is sought for our well-established client who has recently installed new hardware at their installation based on the Kent coast. The ideal applicant will not be less than 30 years old, have proven supervisory experience and the ability to provide good documentation. Knowledge of the insurance field would be a distinct advantage. Relocation assistance available. For further details please phone Kay. Ref: KS27/CW

Network Controllers £5K+ days NW London Responsible operators with experience of teleprocessing networks are required by a national company. Good future prospects with large company benefits are offered in return for your skills in TP Network Control, fault processing and client liaison. For further details please contact Mary. Ref: MC24/CW



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CONTRACTS..

In this article Geoffrey Richardson, general manager of Computer People South, takes a personal and a business view of the South of England, and its characteristics as a market for freelance

and contract staff. Richardson joined the V Group (of which Computer People South is a member) in 1976, and has risen through sales and management positions to the control of CPS.

The South offers opportunities away from big-city blues

THE North, Midlands and London all have hubs of business and generally a common industrial theme, while the South has a more varied business structure and no single specific theme of industry.

For the purpose of this article I have defined the South as Kent, Surrey, Sussex, Hampshire, Wiltshire, Dorset, Devon and Cornwall. The computer contract professional knows that London has plenty of work, and it has been excluded for that reason.

Industry in the South is scattered far and wide. For example, Lancashire has an area of 2,276 square miles while Surrey spreads over 647 square miles - Lancashire has the two main population and industrial centres of Merseyside and Greater Manchester with Surrey focusing on Croydon.

Outside Merseyside and Greater Manchester Lancashire's installations are located in some 26 towns while in Surrey they are located in 49 towns and villages.

What confuses the picture is that Surrey has the highest traffic density in the country and the highest population ratio of residents employed outside the county - mainly in London.

Further analysis of Surrey would show that only 80 of 340 installations within the county are based in Croydon, leaving 260 spread around those 49 satellite towns and villages and it is this area that has remained untouched.

The reasons are logical yet

changing: first, many of the 250 installations are small in comparison with city sites and companies have tended to concentrate on major development work undertaken by large companies.

Increasingly, however, smaller companies are finding the relatively high cost of software house involvement difficult to pass through the financial director and are prepared to heed the agency message - no strings, no over-commitment, full control, less cost.

Second, fewer contractors are prepared to work in the outlying areas, preferring to commute. This is true, but the spiralling cost of commuting, an increasing number of contractors are seeking the benefit of uncatered rather than rush-hour traffic.

Third, the agencies have preferred to locate themselves within the city centres - supposedly near the "action". Agencies are now spreading their wings, however, effectively providing their services from suburban and country bases.

The customer is now finding that a judicious mix of contract and permanent staff solves his alternative needs

contractor and the computer professional who is completing contract work by future?

Since the majority of computer installations are still in the city centres, it is not surprising that most continue to spend their time on calls in these areas.

This familiarity with metropolitan work means offers of work in other more remote locations are met with scepticism.

The rates are no higher than those offered for day assignments, the travelling distances greater and the assignment would seem to be the excitement of working in a big city environment.

Contract staff seem to be the misgivings of permanent staff about a move to a sticks.

Contractors who feel rural assignment is something of a retrograde step are seeking flexibility, which is perhaps the most important advantage of contract working.

Permanent staff need to weigh up the pros and cons of such a move as they will probably be changing both social and social environment.

The short-term nature of contract assignment means that the contractor need not consider such a move at first, but can evaluate the situation knowing that he will be free to reassess the situation after a certain period.

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Further details and form of application from the Assistant Director (Administration), Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Application forms to be returned as soon as possible.

To summarize, developments in the South as a new market area are progressing well, and the spiralling cost of commuting, an increasing number of contractors are seeking the benefit of uncatered rather than rush-hour traffic.

Several contract staff have spoken to say they enjoy the responsibility and the contacts made on their work as computer professionals.

To summarize, developments in the South as a new market area are progressing well, and the spiralling cost of commuting, an increasing number of contractors are seeking the benefit of uncatered rather than rush-hour traffic.

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Finally, developments in the



Recruitment

In Informatics

Microprocessor Engineers

Switzerland: Salaries to SwF. 62,000

Our client's software development Headquarters are situated near Zurich. We have an exclusive assignment to recruit several Software Development Engineers to join the Company's permanent staff. A Bachelor or Masters Degree in Electronics, Electrical Engineering or Computer Sciences is mandatory. All candidates must offer a minimum of four years' involvement in microprocessor software development. There is a preference for those fully familiar with Motorola 6800 hardware and software or as a secondary consideration on Intel 8085/8. Ref. L/3/A.

Customer Support

W. Home Counties: Salary to £10K

Due to the steady expansion of its client base, a leading mini-computer manufacturer has recently opened a customer support centre to serve the Western Home Counties. Consequently, additional Programmers and Analysts/Programmers are urgently required to join their existing teams. At least two years' commercial programming experience combined with the ability to liaise with clients is essential. Fluency in either Cobol or Basic. Our clients have a stated preference for candidates with exposure to either DEC's PDP range or System's 5/6000 Series equipment. However, applicants with experience on any leading commercially orientated mini-computer should not be deterred from applying. Ref. L/3/B.

Management Consultants

London: Salary to £15K

Our client, based in Central London, has an enviable reputation as one of the U.K.'s most prestigious Management Consultants. An expanding client base in S.E. England has produced vacancies for additional Consultants to join existing project teams. All candidates must be self-confident, presentable and have good personal communication skills. It is anticipated that you will be a graduate aged 28 to 34 with the ability to appreciate problems from a business, technical and political point-of-view. Particular requirements are for Information Consultants who have been involved in the selection and use of PABX equipment or who have had exposure to electronic mailing systems. Consultants with a knowledge of structured design techniques, data management or networking in a commercial data processing environment are also invited to apply. Ref. L/3/C.

IBM Programmers

Holland: Salary to £18K

A leading multi-national with Data Centres throughout the world is seeking Applications and Systems Programmers for its IBM 3031 installation in Holland. Applications Programmers should have a minimum of 12 months' experience in COBOL or PL/I on any large IBM mainframe computer. Those who have participated in the program development of an on-line system or who have written and developed programs under IMS will be particularly welcome. Systems Programmers must have recent experience in the implementation of SYS/GENS, releases and enhancements. Should be familiar with MVS, TSO, ACF/VSAM or IMS/VIS. Additional knowledge of PL/I is advantageous. Ref. L/3/D.

Coral 66 Programmers

Sth. H. Counties: Salary to £10K

A leading Systems House and Consultancy based South of Thames and within 40 minutes' drive of Central London and the City has requested Logistik to identify and recruit several CORAL 66 Programmers. You will join a team already engaged in the design, development and implementation of a new military and defence sys-

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Oil & Seismology

Central London: Salary to £13K

A well-respected Company participating in the development of advanced oil and seismic applications is seeking additional project team members for its Central London operations. Applications Programmers, Systems Analysts and Project Leaders should offer commercial experience in a TPC monitor, DBMS or distributed processing environment. Programming in either a minimum of one year's FORTRAN experience whilst Systems Analysts and Project Leaders should have been involved in

Ref. L/3/F.

Real-Time Applications

Germany: Salaries to Dm. 70K

A well-established Systems House with a number of previous clients engaged in the development of real-time and derivative systems is seeking both in-house and contract staff for an urgent requirement for 1-2 year additional Consultants. Team leaders and Project Leaders. All applicants should have the ability to converse in German although not necessary. Ref. L/3/G.

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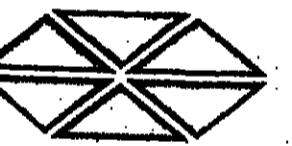


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CW 31 Tricia

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£9,000

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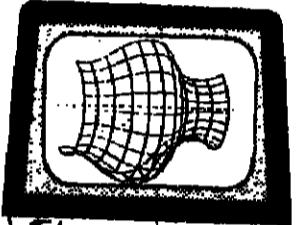
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Pricing on the salary scales
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Application forms and further
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Completed forms should be returned by January
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Reporting to the European Marketing Manager, the successful candidate will be responsible - as Manager of a group of computer professionals - for further planning and development of a European technical support organisation, as well as providing central technical consultancy at a European level.

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A basic salary of up to \$52,000 US Dollars is payable with the sort of benefits and relocation package one can expect from a major organisation.

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When applying, please quote reference 458. Closing date 23rd January 1981.

Data Processing Operations Co-ordinator

Our client, a market leader in the production and circulation of specialist journals, and a member company of a large and diverse group, has recently reappraised the role computing plays in the support of their activities.

Reliant on the group's IBM based facility, and also utilising a Honeywell bureau, they have identified the need to recruit a Co-ordinator to assume responsibility for existing systems; assist in the co-ordination of user requirements within new systems, and also manage the in-house data preparation facility and its development.

We therefore seek a mature and stable individual with a sound background in data processing who wishes to develop a career within an expanding business environment. Additionally, the successful candidate will function in a managerial and advising capacity, as well as retaining and developing experience and responsibility in the day to day provision of a DP service.

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Further details from Norman Bennett on Ext. 283.

Application forms (to be returned by 21 January 1981) can be obtained from:

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 LOLA (London On-Line Local Authorities)
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UNIVAC 1100 Analyst/Programmers with
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IBM 1401 Autocoder Systems Programmers —
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If you think your background would be of interest to this company, contact

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(4012)

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RPG would be desirable, we can train you if necessary, so it's a good way of learning a new language.

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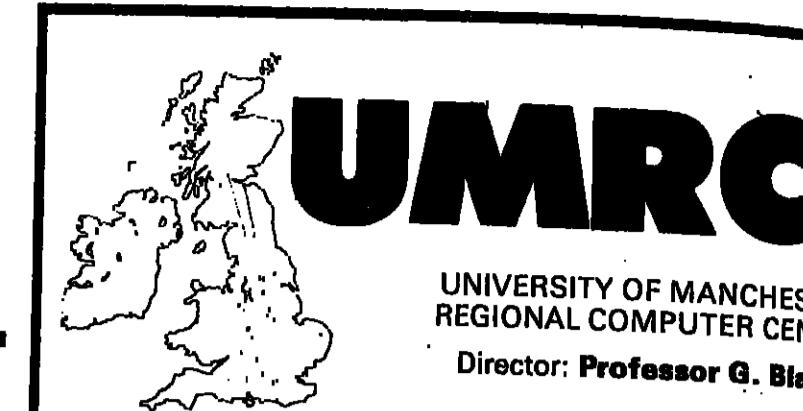
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UMRCC

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Director: Professor G. Black

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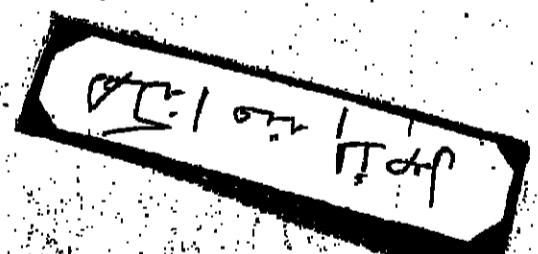
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Candidates should have several years' RPG I experience, preferably on IBM/34. Knowledge of Maples manufacturing modules would be a distinct advantage.

Salary will not be a limiting factor.

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Candidates should send comprehensive personal, career and salary details to:

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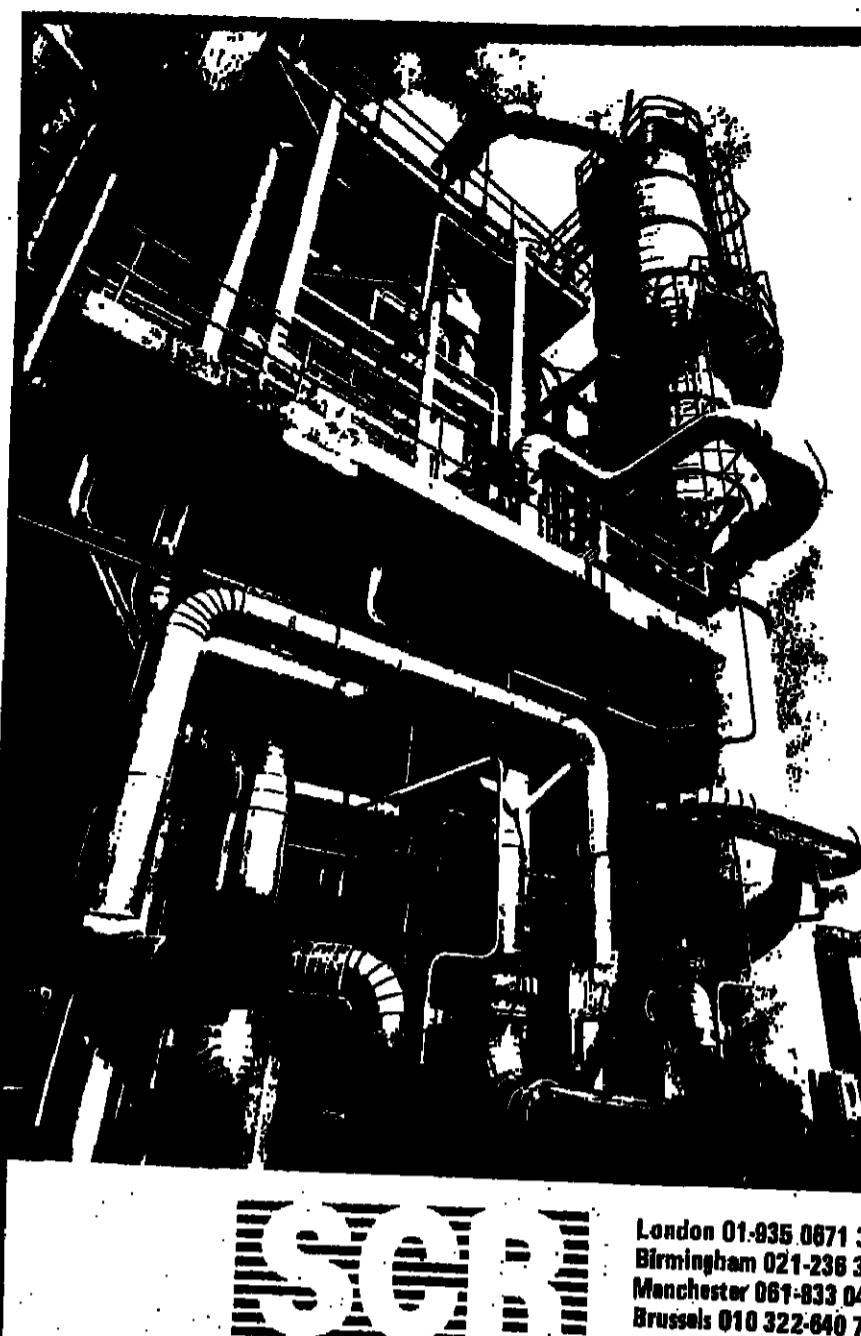
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West UK.

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Extensive Training will be given.

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Relocation allowances are available if required.

Contact Peter Gorton or Howard Wynne regarding this position on 01-637 9611.

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324 Regent Street, London W1

MANAGEMENT &
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Up to £25000

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Candidates should have a higher degree in Computing Science and show evidence of interest and capability in research and teaching and be prepared to undertake supervision of research students.

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(i) general Conditions of Appointment, which include particulars of leave, superannuation, removal expenses, invalidity and study leave, and

(ii) a Statement giving particulars of such matters as help in building, conference grants and special support for research.

The University will gladly supply any further information desired on request to the Registrar.

APPLICATIONS in triplicate, should give the information listed in the general Statement of the Statement and should be sent to the Registrar of the University, G.P.O. Box 498, Adelaide, South Australia, 5001, not later than 16 February 1981.

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Excellent opportunity for Senior Operator with a strong MVS/ICL background to join an International Company in Middlesex. Liquid metal Company.

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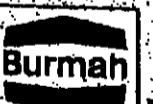
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